S&H Form: (02/05)

REPLY/AMENDMENT FEE TRANSMITTAL

Attorney Docket No.	23.1090
Application Number	09/478,799
Filing Date	January 7, 2000
First Named Inventor	Masanobu HAYAMA, et al.
Group Art Unit	2675
Examiner Name	Amr A. Awad

AMOUNT ENCLOSED	500.00

FEE CALCULATION (fees effective 12/08/04)

CLAIMS AS AMENDED	Claims Remaining After Amendment	Highest Number Previously Paid For	Number Extra	Rate	Calculations
TOTAL CLAIMS	23	- 23 =	0	X $ 50.00 =	$ 0.00
INDEPENDENT CLAIMS	7	- 7 =	0	X $ 200.00 =	0.00

Since an Official Action set an original due date of _, petition is hereby made for an extension to cover the date this reply is filed for which the requisite fee is enclosed (1 month ($120)); (2 months ($450)); (3 months ($1,020)); (4 months ($1,590)); (5 months ($2,160):	
Submission of Brief in support of appeal ($500.00	500.00
If Statutory Disclaimer under Rule 20(d) is enclosed, add fee ($130.00)	
Information Disclosure Statement (Rule 1.17(p)) ($180.00)	
Total of above Calculations =	$ 500.00
Reduction by 50% for filing by small entity (37 CFR 1.9, 1.27 & 1.28)	
TOTAL FEES DUE =	$ 500.00

(1) If entry (1) is less than entry (2), entry (3) is "0".
(2) If entry (2) is less than 20, change entry (2) to "20".
(4) If entry (4) is less than entry (5), entry (6) is "0".
(5) If entry (5) is less than 3, change entry (5) to "3".

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☒ If the above-noted "AMOUNT ENCLOSED" is not correct, the Commissioner is hereby authorized to credit any overpayment or charge any additional fees necessary to:

Deposit Account No.	19-3935
Deposit Account Name	STAAS & HALSEY LLP

☒ The Commissioner is also authorized to credit any overpayments or charge any additional fees required under 37 CFR 1.16 (filing fees) or 37 CFR 1.17 (processing fees) during the prosecution of this application, including any related application(s) claiming benefit hereof pursuant to 35 USC § 120 (e.g., continuations/divisionals/CIPs under 37 CFR 1.53(b) and/or continuations/divisionals/CPAs under 37 CFR 1.53(d)) to maintain pendency hereof or of any such related application.

SUBMITTED BY: STAAS & HALSEY LLP

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Attorney Docket No. 23.1090

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of:

Masanobu HAYAMA, et al.

Serial No.: 09/478,799 Group Art Unit: 2675

Filed: January 7, 2000 Examiner: Amr A. Awad

For: COORDINATE INPUT DEVICE HAVING ROTATING BODIES CAPABLE OF ROTATING IN A DIRECTION NORMAL TO THE ROTATION OF A WHEEL

BRIEF OF APPELLANTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTENTION: MAIL STOP APPEAL BRIEF-PATENTS

In a Notice of Appeal filed April 4, 2005, the Applicant appealed the Examiner's October 7, 2004 Office Action finally rejecting claims 1-17 and 21-25. A fee of $500.00 is being submitted herewith. Therefore, Appellant's Brief is due June 4, 2005. Appellant's Brief together with the requisite fee set forth in 37 CFR § 41.20(b)(2) is submitted herewith.

I. REAL PARTY IN INTEREST (37 CFR § 41.37(c)(1)(i))

The real party in interest is FUJITSU TAKAMISAWA COMPONENT LIMITED, the assignee of the subject application.

II. RELATED APPEALS AND INTERFERENCES (37 CFR § 41.37(c)(1)(ii))

Appellant, Appellants' legal representatives, and assignee are not aware of any other appeals or interferences which directly affect or be directly affected by, or having a bearing, on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS (37 CFR § 41.37(c)(1)(iii))

Appealed claims 1-17 and 21-25 have been rejected.

IV. STATUS OF AMENDMENTS (37 CFR § 41.37(c)(1)(iv))

No amendments were filed subsequent to the Final Office Action mailed October 7, 2004.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER (37 CFR § 41.37(c)(1)(v))

Claims 1, 2, 11,12, 22, 24, and 25

Independent claim 1 recites a coordinate input device having a polygonal wheel 82 having plural sides, as a circumferential edge thereof, and which is rotatable about a first axis as shown, for example, in FIG. 11.

Claim 1 recites "a plurality of rotating bodies" 84 (see, for example, rotating body 84 in FIG. 11), "each of the rotating bodies disposed along a corresponding one of the plural sides and rotating along with the corresponding one of the plural sides of said polygonal wheel about the first axis" 82 (see FIG. 11, for example, where rotating bodies 84 are disposed along a corresponding one of the plural sides of the polygonal wheel 82 and rotate along with the corresponding one of the plural sides of the polygonal wheel 82, which is configured to rotate about a first axis). Claim 1 also recites, "each of the rotating bodies rotatable about the corresponding one of the plural sides of said polygonal wheel as a second axis" (see also FIG. 11, for example, where each of the rotating bodies 82 are rotatable about the corresponding one of the plural sides of the polygonal wheel 82 as a second axis). Claim 1 recites that the

second axis "is different from the first axis." See FIG. 11, for example, which shows an arrow on the rotating body 84 rotating about a second axis which is different from the arrow showing the rotation of the polygonal wheel 82 and the plurality of rotating bodies 84 rotating about a first axis.

Claim 1 further recites a rotating body rotating state detection means 89 for detecting a rotating state of said rotating bodies. For example, the rotating body 84 resting on a frame positioned uppermost among the frames of the polygonal wheel 82 is in contact with a spherical shaft 85 connected to a rotary encoder 72, which includes a rotating body light emitting device 87, a rotating body light receiving device 88, and rotating body slit disc 86. When a user touches the rotating body 84 with his finger so as to rotate the rotating body 84, the spherical shaft 85 is rotated in response to the rotation of the rotating body by the user and the rotating body slit disc 86 is then rotated, thereby detecting the rotating direction and distance of the rotating body 84. See FIG. 11 and page 9, line 36 to page 10, line 10.

Claim 1 further recites a wheel rotating state detection means 67 for detecting a rotating state of said polygonal wheel. For example, a wheel 62 is connected via a wheel shaft 63 to the wheel rotary encoder 71, which includes a wheel light emitting device 65, a wheel light receiving device 66 and a wheel slit disc 64, and the rotating direction and distance of the wheel 62 is detected (see FIG. 8 and lines 26-33).

Claim 1 further recites a format change-over switch "SW4" as shown in FIG. 15.

Claim 1 further recites data transmission means for transmitting information detected by each of said respective detection means as a set of operation instructions for a computer and adapted to effect transmission in a first format when said format change-over switch is not depressed and to effect another transmission in a second format when said format change-over switch is depressed. For example, a control IC 31 constituted by a microprocessor transmits information detected by the rotating body rotating state detection means 89 and the wheel rotating state detection means 67 (see FIG. 12). FIG. 17 describes data output formats of the coordinate input device provided with format change-over (see page 13, line 18 to page 14, line 34).

Independent claims 2, 11, 12, 22, 24, and 25 relate to a coordinate input device having a plurality of rotating bodies similar to claim 1 and which is supported in by the specification in a similar manner.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL (37 CFR § 41.37(c)(1)(vi))

Claims 1-17 and 21-25 stand rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent 5,479,190 to Rowe in view of U.S. Patent 5,912,661 to Siddiqui.

VII. ARGUMENT OF EACH GROUND OF REJECTION PRESENTED FOR REVIEW (37 CFR § 41.37(c)(1)(vii))

In the Final Office Action, the Examiner rejected claims 1-17 and 21-25 under 35 U.S.C. § 103(a) as being unpatentable over Rowe in view of Siddiqui.

The present invention as recited in claim 1 relates to a coordinate input device comprising "a plurality of rotating bodies, each of the rotating bodies disposed along a corresponding one of the plural sides and rotating along with the corresponding one of the plural sides of said polygonal wheel about the first axis and each of the rotating bodies rotatable about the corresponding one of the plural sides of said polygonal wheel as a second axis, which is different from the first axis such that the polygonal wheel and the plurality of rotating bodies rotate about the first axis." The circumferential edge of the polygonal wheel having plural sides rotates about the first axis and each of the rotating bodies rotates along with a corresponding one of the plural sides of said polygonal wheel about the first axis, and each of the rotating bodies is rotatable about the corresponding one of the plural sides as a second axis. Accordingly, each of the rotating bodies corresponds to one side of the plural sides of the polygonal wheel such that a user can rotate the polygonal wheel about a first axis, and rotate the rotating bodies about a second axis.

Rowe teaches a multi-axis continuous loop 150 including a band 152. However, the band 152 does not rotate and moves in a fixed position. Only the grooved segments 154 of Rowe rotate. Rowe teaches that the grooved segments 154 may also be rotated on the band 152 in the direction indicated by Arrow "R". That is, the grooved segments 154 are slidably mounted on band 152 and may be freely moved along the entire course of the band 152 in the direction indicated by Arrow "M" (see column 8, line 8 - column 9, line 59 and FIG. 13 through FIG. 17).

Contrary to the Examiner's assertions on page 2 of the Advisory Action, it would not have been suggested even to a person of ordinary skill in the art that the grooved segments 154, after being slidably mounted on the band 152, qualifies as a polygonal wheel which rotates

about a first axis. Nothing in the Rowe reference teaches or suggests that grooved segments 154, after being slidably mounted on the band 152, qualifies as a polygonal wheel.

"In determining the propriety of the Patent Office case for obviousness..., it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. MPEP § 2143.01. The Examiner, instead, relies on broad conclusory knowledge and subjective belief in suggesting that the grooved segments 154 of Rowe qualify as a polygonal wheel which rotates about a first axis.

It is further submitted that grooved segments 154 being slidably mounted on band 152 as taught by Rowe is a completely different function or feature than grooved segments 154 rotating along with band 152 as erroneously suggested by the Examiner. Rowe does not teach or suggest that grooved segments 154 rotate along with band 152 or that the band 152 even rotates. In the present invention, the claimed rotating bodies rotate along with the polygonal wheel about the first axis. Rowe does not teach the features recited in claim 1.

Siddiqui teaches "a computer input device with a...wheel button type z-encoder mechanism. The wheel button is supported on an axle or spindle within the housing of the input device. The axle is supported in the housing by spaced-apart axle supports." (See Siddiqui at column 2, lines 3-8.) Siddiqui, however, does not teach "a plurality of rotating bodies" (see claim 1) and does not suggest anything related to each of the rotating bodies rotatable about the corresponding one of the plural sides of said polygonal wheel as a second axis. Thus, Rowe and Siddiqui, either alone or in combination, do not teach or suggest the features as recited in claim 1 of the present invention.

Similar to claim 1, claims 2, 11, 12 and 22 relates to a coordinate input device having a polygonal wheel, which "rotate[s] about [a] first axis."

Claim 24 relates to a coordinate input device comprising "a polygonal wheel having plural sides to rotate in a first direction, each of the rotating bodies being rotationally attached to

a corresponding one of the plural sides to rotate in a second direction perpendicular to the first direction for multi-axial coordinate input."

Claim 25 relates to a coordinate input device comprising "a polygonal wheel having rotating bodies thereon rotating in a direction perpendicular to a wheel rotation direction for multi-axial coordinate input." Therefore, claims 2, 11, 12, 22, 24 and 25 also distinguish over the cited prior art.

Claims 3-10, claims 13-17, 20, and 21, and claim 23 patentably distinguish over the prior art for their dependency from claims 1, 11, and 22, respectively.

In summary, it is submitted that claims 1-17 and 21-25 patentably distinguish over the prior art. Reversal of the Examiner's rejection is respectfully requested.

The Commissioner is authorized to charge any Appeal Brief fee for underpayment or credit any overpayment to Deposit Account No. 19-3935.

Respectfully submitted,
STAAS & HALSEY

Date: 6-6-05

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VIII. APPENDIX (37 CFR § 41.37(c)(1)(viii))

1. (previously presented) A coordinate input device having a polygonal wheel having plural sides, as a circumferential edge thereof, and which is rotatable about a first axis, comprising:

a plurality of rotating bodies, each of the rotating bodies disposed along a corresponding one of the plural sides and rotating along with the corresponding one of the plural sides of said polygonal wheel about the first axis and each of the rotating bodies rotatable about the corresponding one of the plural sides of said polygonal wheel as a second axis, which is different from the first axis such that the polygonal wheel and the plurality of rotating bodies rotate about the first axis;

rotating body rotating state detection means for detecting a rotating state of said rotating bodies;

wheel rotating state detection means for detecting a rotating state of said polygonal wheel;

a format change-over switch; and

data transmission means for transmitting information detected by each of said respective detection means as a set of operation instructions for a computer and adapted to effect transmission in a first format when said format change-over switch is not depressed and to effect another transmission in a second format when said format change-over switch is depressed.

2. (previously presented) A coordinate input device having a polygonal wheel having plural sides, as a circumferential edge thereof, and which is rotatable about a first axis, comprising:

a plurality of rotating bodies, each of the rotating bodies disposed along a corresponding one of the plural sides and rotating along with the corresponding one of the plural sides of said polygonal wheel about the first axis and each of the rotating bodies rotatable about the corresponding one of the plural sides of said polygonal wheel as a second axis, which is different from the first axis such that the polygonal wheel and the plurality of rotating bodies rotate about the first axis;

ball moving state detection means for detecting a moving state of a ball;

click switch operating state detection means for detecting an operating state of a click switch;

wheel rotating state detection means for detecting a rotating state of said polygonal wheel;

a format change-over switch; and

data transmission means for transmitting respective pieces of information detected by said respective detection means as a set of operation instructions for a computer and adapted to effect transmission in a first format when said format change-over switch is not depressed and to effect another transmission in a second format when said format change-over switch is depressed.

3. (previously presented) The coordinate input device as set forth in claim 1, wherein said coordinate input device has a left click switch as a first switch and a right click switch as a second switch, said coordinate input device further comprising:

a third switch disposed as a lower portion of said polygonal wheel;

a wheel support portion having a construction to support said polygonal wheel and to allow said polygonal wheel to slide and adapted to drive said third switch by depressing said polygonal wheel downwardly; and

third switch operating state detection means for detecting the operating state of said third switch.

4. (previously presented) The coordinate input device as set forth in claim 3, wherein

said wheel support portion further comprises a ratchet construction on a side of said polygonal wheel, and wherein

said polygonal wheel is adapted to fit in said ratchet construction.

5. (previously presented) The coordinate input device as set forth in claim 1, wherein

an inner wall at a center of said respective rotating bodies through which said circumferential edge of said polygonal wheel is put has a locking construction, and wherein

said circumferential edge of said polygonal wheel is adapted to fit in a second locking construction.

6. (previously presented) The coordinate input device as set forth in claim 1, wherein said rotating body is of a cylindrical configuration.

7. (previously presented) The coordinate input device as set forth in claim 1, wherein said rotating body is of a spherical configuration.

8. (previously presented) The coordinate input device as set forth in claim 1, wherein a surface of said rotating bodies is covered with a slip preventive material.

9. (previously presented) The coordinate input device as set forth in claim 1, wherein a recess is formed in a surface of said rotating bodies.

10. (previously presented) The coordinate input device as set forth in claim 1, wherein said coordinate input device further comprises:

ball moving state detection means for detecting a moving state of a ball; and

click switch operating state detection means for detecting an operating state of a click switch.

11. (previously presented) A coordinate input device having a polygonal wheel having plural sides, as a circumferential edge thereof, and which is rotatable about a first axis, comprising:

a plurality of rotating bodies, each of the rotating bodies disposed along a corresponding one of the plural sides and rotating along with the corresponding one of the plural sides of said polygonal wheel about the first axis and each of the rotating bodies rotatable about the corresponding one of the plural sides of said polygonal wheel as a second axis, which is different from the first axis such that the polygonal wheel and the plurality of rotating bodies rotate about the first axis;

rotating body rotating state detection means for detecting a rotating state of said rotating bodies;

a wheel rotating state detection unit detecting a rotating state of said polygonal wheel;

a format change-over switch; and

a data transmission unit transmitting information detected by each of said respective detection units as a set of operation instructions for a computer and adapted to effect transmission in a first format when said format change-over switch is not depressed and to effect another transmission in a second format when said format change-over switch is depressed.

12. (previously presented) A coordinate input device having a polygonal wheel having plural sides, as a circumferential edge thereof, and which is rotatable about a first axis, comprising:

a plurality of rotating bodies, each of the rotating bodies disposed along a corresponding one of the plural sides and rotating along with the corresponding one of the plural sides of said polygonal wheel about the first axis and each of the rotating bodies rotatable about the corresponding one of the plural sides of said polygonal wheel as a second axis, which is different from the first axis such that the polygonal wheel and the plurality of rotating bodies rotate about the first axis;

a rotating body rotating state detection unit detecting a rotating state of said rotating bodies;

a ball moving state detection unit detecting a moving state of a ball;

a click switch operating state detection unit detecting an operating state of a click switch;

a wheel rotating state detection unit detecting a rotating state of said polygonal wheel;

a format change-over switch; and

a data transmission unit transmitting respective pieces of information detected by said respective detection units as a set of operation instructions for a computer and adapted to effect transmission in a first format when said format change-over switch is not depressed and to effect another transmission in a second format when said format change-over switch is depressed.

13. (previously presented) The coordinate input device as set forth in claim 11, wherein said coordinate input device has a left click switch as a first switch and a right click switch as a second switch, said coordinate input device further comprising:

a third switch disposed as a lower portion of said polygonal wheel;

a wheel support portion to support said polygonal wheel and to allow said polygonal wheel to slide and adapted to drive said third switch by depressing said polygonal wheel downwardly; and

a third switch operating state detection unit detecting the operating state of said third switch.

14. (previously presented) The coordinate input device as set forth in claim 13, wherein said wheel support portion further comprises a ratchet construction on a side of said polygonal wheel, and wherein said polygonal wheel is adapted to fit in said ratchet construction.

15. (previously presented) The coordinate input device as set forth in claim 11, wherein an inner wall at a center of said respective rotating bodies through which said circumferential edge of said polygonal wheel is put has a locking construction, and wherein said circumferential edge of said polygonal wheel is adapted to fit in a second locking construction.

16. (previously presented) The coordinate input device as set forth in claim 11, wherein said rotating body is of a cylindrical configuration.

17. (previously presented) The coordinate input device as set forth in claim 11, wherein said rotating body is of a spherical configuration.

18. (cancelled)

19. (cancelled)

20. (previously presented) The coordinate input device as set forth in claim 11, wherein a surface of said rotating bodies is covered with a slip preventive material.

21. (previously presented) The coordinate input device as set forth in claim 11, wherein a recess is formed in a surface of said rotating bodies.

22. (previously presented) A coordinate input device, comprising:

a plurality of rotating bodies;

a polygonal wheel having plural sides, the polygonal wheel being rotatable about a center thereof, as a first axis, each of the plural sides of the polygonal wheel couples to a respective one or ones of the plurality of rotating bodies such that each of the rotating bodies rotates with the corresponding one of the plural sides about the first axis, and is rotatable about the corresponding one of the plural sides of said polygonal wheel, as a second axis, which is different from the first axis such that the polygonal wheel and the plurality of rotating bodies rotate about the first axis; and

a processing unit to detect and to output at least one of a rotating state of the polygonal wheel and a respective one of the rotating bodies which is being rotated.

23. (previously presented) The coordinate input device as set forth in claim 22, wherein each of the rotating bodies rotatably couples to only the corresponding one of the plural sides of the polygonal wheel.

24. (previously presented) A coordinate input device, comprising:

a plurality of rotating bodies;

a polygonal wheel having plural sides to rotate in a first direction, each of the rotating bodies being rotationally attached to a corresponding one of the plural sides to rotate in a second direction perpendicular to the first direction for multi-axial coordinate input; and

a processing unit to detect and to output at least one of a rotating state of the polygonal wheel and a respective one of the rotating bodies which is being rotated.

25. (previously presented) A coordinate input device, comprising:

a polygonal wheel having rotating bodies thereon rotating in a direction perpendicular to a wheel rotation direction for multi-axial coordinate input; and

a processing unit to detect and to output at least one of a rotating state of the polygonal wheel and a respective one of the rotating bodies which is being rotated.

IX. APPENDIX (37 CFR § 41.37(c)(1)(ix))

Not applicable.

X. APPENDIX (37 CFR § 41.37(c)(1)(x))

Not applicable.